

SUPP NO. 1

DR. JUDY WOOD

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March 29, 2007

VIA EMAIL AND CERTIFIED MAIL RRR

Chief, Management and Organization Division
National Institute of Standards and Technology
100 Bureau Drive, Mail Stop 3220
Gaithersburg, MD 20899-3220
Email: info.quality@nist.gov

Re: Requests for Correction per

Section 515 of Public Law 106-554

SUPPLEMENT # 1 to RFC submitted March 16, 2007

Ref: http://www.ocio.os.doc.gov/ITPolicyandPrograms/Information_Quality/ssLINK/PROD01_002667

Dear Chief, Management and Organization Division:

This is a supplement to the above referenced request for correction that I filed on March 16, 2007, as acknowledged on March 19, 2007, by NIST. Please also acknowledge receipt of this supplement # 1 in like manner and timeframe.

This supplement asserts that NIST contractor, Applied Research Associates of Albuquerque, NM, under solicitation [SB1341-03-Q-0334](#), (<http://www.eqs.gov/spg/DOC/NIST/AcAsD/SB1341%2D03%2DQ%2D0334/listing.html>), among other solicitations, has a significant, clear and palpable conflict of interest that adversely affects the quality and the integrity of the work done by ARA for NIST.

I have elsewhere asserted that the evidence confirms that the World Trade Center towers were felled by use of Directed Energy Weaponry. See pg. 32 of [my RFC](#) filed on March 16, 2007.

ARA is a significant manufacturer of directed energy weapons and/or components thereof.

This information was not disclosed in NCSTAR 1 and should have been.

Accordingly, I hereby request the correction of NCSTAR 1 to disclose the extent to which ARA is a manufacturer of directed energy weapons.

This Supplement # 1 to my RFC dated March 16, 2007.

Respectfully submitted

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SUPP NO. 2

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April 20, 2007

VIA EMAIL AND CERTIFIED MAIL RRR

Chief, Management and Organization Division
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Re: Requests for Correction per
Section 515 of Public Law 106-554
SUPPLEMENT # 2 to RFC submitted April 20, 2007

Ref: http://www.ocio.os.doc.gov/ITPolicyandPrograms/Information_Quality/ssLINK/PROD01_002667
Ref: http://www.ocio.os.doc.gov/ITPolicyandPrograms/Information_Quality/ssLINK/PROD01_002722

Dear Chief, Management and Organization Division:

This is Supplement #2 to that certain Request for Correction, filed as above noted, by me on March 16, 2007. Except as expressly supplemented herein, all assertions set forth in said RFC and in said Supplement #1 thereto remain in full force and effect.

I supplement my RFC as follows:

Attached hereto and made a part hereof as Exhibit A is that certain witness statement of eyewitness EMT Patricia Ondrovic. In addition to the statement as attached, I hereby incorporate by reference all redacted portions of said witness statement, Exhibit A hereof, as and for additional confirmation of my overall assertion that directed energy weapons were a causal factor in the destruction of the World Trade Center complex on 9/11/01. I also attach hereto Exhibit B, the statement of eyewitness Firefighter Fernando Camacho. I also attach hereto Exhibit C, additional witness statements, all as more fully set forth in said Exhibit C.

Moreover, in addition to the witness statements annexed hereto as Exhibits A, B and listed in Exhibit C, attention is directed to the following additional witness statements, some of which are also inexplicably redacted, as is that of Patricia Ondrovic, that should be deemed, as indicated, incorporated by reference into this Supplement #2, in their entirety, including the versions that are not redacted:

- Patricia Ondrovic (9110048_PatriciaOndrovic.PDF)
- Fernando Camacho (9110318_FernandoCamacho.PDF)
- James McGlynn (9110447_JamesMcGlynn.PDF)
- DanWalker (9110341_DanWalker.PDF)
- Glen Asaeda (9110062_GlenAsaeda.PDF)
- George Kozlowski (9110308_GeorgeKozlowski.PDF)
- Patrick McNally (9110199_PatrickMcNally.PDF)
- John Malley (9110319_JohnMalley.PDF)
- Kevin Gorman (9110434_KevinGorman.PDF)
- Kenneth Escoffery (9110460_KennethEscoffery.PDF)

Moreover, and in addition to those redacted statements of the above-named persons, I hereby incorporate, by reference, all statements of witnesses that were taken as a part of the so-called "World Trade Center Task Force" project, whether redacted or not redacted, from which the above-mentioned statements are taken.

The ones here relied on by being specifically referenced, confirm, in the main, that the Twin Towers were destroyed by weaponry whose characteristics included high pitched "jet engine" noise, accompanied by hurricane force wind effects and which caused objects and people to disappear from view and to be turned to dust as those who were only marginally better sheltered saw, observed and then reported in their statements.

In other words, the plain fact of the matter is that NIST ignored eyewitness testimony that is completely consistent with the claim that directed energy weaponry are a causal factor in the destruction of the Twin Towers and that the buildings did not "collapse" as NIST has fraudulently and deceptively reported.

Accordingly, in addition to incorporating the witness statements in the form available to the public, I also designate as being incorporated by reference, the non-redacted versions of any and all cited witness statements that include redactions, such as those of Patricia Ondrovic and others as being deemed incorporated by reference, based on the assumption that NIST would have had access to the complete witness statements and not the redacted ones.

Based upon the foregoing, I here reiterate that NCSTAR 1 is false, misleading and fraudulent within the meaning of the False Claims Act 31 U.S.C. §§ 3729, *et seq*

In addition, I assert that NIST contractors, as listed in NCSTAR 1, including by way of non-exhaustive example, those listed below, either knew or should have known of the falsity of NCSTAR 1 as it relates to the use of directed energy weapons¹:

¹ The words 'directed energy weapons' as used in this Supplement #2 and elsewhere in the pending RFC, including Supplement # 1 thereto, shall have the meaning ascribed and found in this link:
<http://janedoe0911.tripod.com/StarWarsBeam7.html#DEW>

As many weapons systems that comprise 'directed energy weapons' cannot be known by persons not having access to classified information, a general, all inclusive definition is mandated and NIST should be guided accordingly..

Applied Research Associates Inc.

Science Applications International Corp.

Boeing

NuStats

Computer Aided Engineering Associates, Inc.

DataSource, Inc

GeoStats, Inc.

Gilsanz Murray Steficek LLP

Hughes Associates, Inc,

Ajmal Abbasi, Eduardo Kausel, David Parks, David Sharp, Daniele Veneziano, Josef Van Dyck and

Kaspar William

Isolatek International, Inc.

Leslie E. Roberson Associates, RLLP

National Fire Protection Association

Rolf Jensen & Associates, Inc.

Rosenwasser/Grossman Consulting Engineers, P.C.

Simpson Gumpertz & Heger Inc.

S.K.Ghosh Associates, Inc.

Skidmore, Owings & Merrill, LLP

Teng & Associates, Inc.

Underwriters Laboratories, Inc.

Wiss, Janney, Elstner Associates, Inc.

American Airlines

Silverstein Properties

United Air Lines

Except as otherwise indicated herein, all claims, information and supporting data included in the original and Supplement # 1 thereof, remain in full force and effect. This Supplement is dated April 20, 2007 and is

Respectfully,

Dr. Juan Carlos

Cc:

Jerry V.

8 West

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Exhibi

- 0048_PatriciaOndrovic.PDF)

Exhibi

- 10318_FernandoCamacho.PDF)

Exhibi

- 447_JamesMcGlynn.PDF)
- DanWalker.PDF)
- GlenAsaeda.PDF)
- 10308_GeorgeKozlowski.PDF)
- 0199_PatrickMcNally.PDF)
- JohnMalley.PDF)
- 34_KevinGorman.PDF)
- 10460_KennethEscoffery.PDF)

P. ONDROVIC

CHRISTOPHER ECCLESTON: Today's date is October 11, 2001. The time is 6:48 AM, and this is Christopher Eccleston of the New York City Fire Department. I am conducting an interview with the following individual...please state your name, rank, title, and assigned command area of the Fire Department of the City of New York, regarding the events of September 11, 2001.

PATRICIA ONDROVIC: Patricia Ondrovic, shield 1634, EMTD, assigned to Battalion 8.

Q: Were you assigned to the World Trade Center disaster on September 11, 2001?

A: Yes.

Q: En route to the alarm, what did you see?

A: I saw the two towers burning.

Q: On arrival, did any civilians report anything to you?

A: No.

Q: Where did you park your vehicle when you arrived?

A: In the middle of Vesey Street between West and whatever is East of Vesey.

Q: On this map, can you indicate with a number 1 where you parked your vehicle?

A: Um...it was on Vesey between West and the West Side Highway so, it was, I'm not sure if it was this block or that block.

P. ONDROVIC

Q: Okay, just approximate and put a number 1.

A: I guess it was over here.

Q: Okay, and what vehicle were you in?

A: Vehicle 90.

Q: Vehicle 90. Whom did you first report to and where?

A: On Vesey and West, in the middle of the block, there was an EMS captain.

I never got his name, I don't know who he was. I said I was 07 Charlie, he said park it over there. That was the last I saw of him.

Q: Were you given a specific assignment?

A: No. Stand by. Take the equipment out of the vehicle and stand by.

Q: Were you asked to assist any specific units?

A: No.

Q: Can you tell me what you did when you arrived at that location?

A: We took the stretcher and all the crash equipment out of the bus and we formed up alongside one of the buildings on Vesey. I don't remember which number it was. We were in a line of several other ambulances. Next to us was a St. Claire's ambulance and a Cabrini Ambulance. I think there was only one other EMS ambulance on that block at the time I was there. That was vehicle 350, 08 David. I didn't know a lot of the people there, I didn't know the EMS captain that was there. There were no patients that we could see at that point. I think they were trying to set up a triage in front of the building that the ambulances were all parked at. I guess we were supposed to be

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the first on the wave to take patients out, and there was a Tex-Mex restaurant across the street. I went in to use the bathroom, that's where the Police were using their command center. I saw a police captain that I knew, and he came out to me. He looked absolutely terrified, he was shaking, he was pale, he was sweating. I looked at him, I said what's wrong? He said there's another plane headed our way, and they just blew up the Pentagon. I said, another plane? What are you talking about? I hadn't realized that planes had hit this, I thought they just set bombs off. I didn't realize when I got there that planes hit it. I said, what do you mean another plane? He said two planes hit the World Trade Center. So I'm thinking a little Cessena. How can a little Cessena do all that damage? He said no, 757s. I said big things? See I was there for about 25 minutes before I knew that planes had crashed into this. We just got assigned to do stand-by. We didn't know what the stand-by was. I mean, who thinks something like that? You just think they hit it again. So I said, what do you mean there's another one headed this way? He said, it's on the TV, there's a TV in there and it said that the Pentagon has been hit. Then we all went outside cause they had on the police radio that there was another plane headed in our direction, we all went outside and started looking up in the sky. Then the EMS captain said everyone grab your equipment, get to your vehicles and stay with your vehicles. My partner and I grabbed our stretcher, went to put it in the back of our vehicle, and at that time, I think it was the lobby of the building behind us blew out. Everybody started running, I didn't see him again that day. He got thrown one way, I got

P. ONDROVIC

thrown the other way. I started running towards the West Side Highway, and there was another building on the corner, I guess it was a federal building, cause it was all the green and gray uniforms with the Smokey the Bear hats, the cops in there. I went to run in the lobby cause all of a sudden you couldn't see anything. There was smoke, there was debris, there was everything flying around. I ran into the lobby cause I had no idea what had happened and the cops that were in there were telling everybody get out, get out, get out. Where are you gonna go? Stuff's blowing up. So I ran back out and I started running west again. At that point, there was a car on the corner of I think I was here at that point, on the West Side Highway.

Q: West Side Highway and Vesey?

A: And Vesey, yeah. I was still on Vesey, cause the building that blew up on me was on Vesey, it was on the corner next to the West Side Highway. Cause I know I was running west, I didn't run that way. Thank God, I would have been dead had I run the other way. But I ran towards the West Side Highway, and I kept running up Vesey. As I was running up Vesey, the first car blew up on me on the corner of Vessey and the West Side Highway. That set my turnout coat on fire, that set my hair on fire, and that set my feet on fire. I kept running. I got news for you, those turn out coats need to be called burn out coats, cause this thing caught up in flames. They cut two inches off my hair in less than two minutes, my coat was completely engulfed, and that was the only way I could see where I was running at that point, because I had a glow from my coat.

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There's hundreds of cops all running up there, and I ended up running through this park, and I couldn't even see where I was running anymore. I kept running North.

Q: Through North Park?

A: I guess that's North Park. It's a big green, grassy area, and there's nothing there. As I was running up here, two or three more cars exploded on me. They weren't near any buildings at that point, they were just parked on the street. The traffic guys hadn't gotten a chance to tow anything yet, cause this was all during the first hour I guess of this thing happening. So there were still cars parked on the street that were completely independent of that. Three cars blew up on me, stuff was being thrown. I went home all bruised that day. Thank God it was only bruises. I just ran into this park along with a bunch of other people, and stuff was still blowing up, I don't think I looked back, but you couldn't see anything, everything was just black. I was running and I was falling over people, cause people were crawling on the ground cause they couldn't see anymore. I just kept on running north. I could smell water, so I just kept on running towards the water, cause I knew that my coat was on fire, and I figured well, if I can see a boat over the water, I'm just gonna jump onto the boat and take that thing to Jersey, cause no one wants to blow up Jersey. Stuff is still blowing up behind me, as I'm running. I can hear stuff exploding. I could hear rumbling, the street under me was moving like I was in an earthquake. I've been in those, so I know what they feel like. It felt like an earthquake. There was no where safe to go. As I was running north in this park, and then I could start seeing again a little bit, and I just kept looking in the sky. Cause the captain was saying

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there's another plane heading in our direction, I was looking for another plane. I saw something in the sky, it was a plane, but it was way out. It looked like it was over Jersey or something, then it wasn't there anymore. I saw a small fireball, and it was gone. I saw two other planes. One came in one way, and the other came in the other way, and there was a plane in the middle that was way far off in the distance. Then the plane in the middle just disappeared into a little fire ball. It looked like the size of a golf ball from where I could see it. And the other two planes veered off into opposite directions. I just kept on running north. About fifteen blocks later, I had no idea that that was just the first tower that had come down. I had no idea at that time that that's what that was, and the other buildings were being affected, of course, by that building falling. I found another ambulance, I believe it was the 08 Adam, because it was Valdivia and Jose Perez. Joseph Valdivia used to be my partner on tour 3, and when I finally caught up to them, I told them what was happening. I told them whatever you do, don't go back that way cause they just blew up triage. I thought that they blew up our triage sector, cause that's where the command was and everything. That was the only thing that I had to go by, everybody that was there was gone. Cause a couple of the police officers that are now missing are guys that I had known, and that's where they were. The paramedic from Cabrini, that's where he was. I was just talking to him 20 minutes before everything blew up. I don't know where he ran, I don't know if he ran the wrong way, cause I know I ran the right way. If you ran the opposite way, you were dead. As I got like 15, 20 blocks away, now I'm on the West Side Highway cause I came out of this park and I found the other

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ambulance. I saw my ex-partner, and I said get in this thing and drive it to Westchester. I told him get the hell out of the city. Get everyone who can get in this, I said shit's still blowing up down there. Whatever you do, don't go in that direction, start driving north. He was like, looking at me like I was insane. Cause I don't know if anyone saw what had happened. All you could see was black smoke and that's all I can see at that point. Now I'm in an area where all the reporters are coming up to me and asking what had happened, and I said I don't think I'm allowed to talk about it. Cause I don't know what happened, and I wasn't gonna tell anybody. You know, it was surreal, like it wasn't really happening. So then an EMS Lieutenant comes over, he sees me standing with 8 Adam, and he says okay, you guys are gonna go three blocks south. I looked at him, and I said are you out of your mind? I found another guy from 8 David, Charles Gschlecht and we found each other as we were running. He couldn't find his partner, and I couldn't find mine, so we kind of synched up together, cause at least we knew each other and it's like, okay, we're okay. He said I can't find my partner. I said I can't find mine either, I think he got blown the wrong way. This guy was telling me that his partner went back in to help somebody, and that was the last we saw of either of them for awhile. That was the last I saw my partner for six whole days, cause I didn't come back to work after that.

Q: Who was the lieutenant you saw, do you know?

A: Yeah, Bobby Deleon. Bobby Deleon comes up to me, and I know him cause he used to be a union rep up in the Bronx when I worked up there a million years

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ago, he tells us to take the vehicle, put me and Charles in the back of the vehicle and go three blocks south. Charles told him, are you out of your mind? We're not safe where we are, let alone three blocks south. Yeah, yeah, yeah, I know, I know. Get in the ambulance and go three blocks south. At that point I got really upset. I said, do you realize they just blew up our triage sector? Everybody back there is dead, everybody back there is gone. There is no reason for us to go back there, we don't have the proper protective equipment, we don't have the proper vehicles. There's no way I'm going back there, there's no reason to go back. Yeah, yeah, yeah, I know, don't be hysterical, just go back three blocks south. I'm not going three blocks south, he's not going three blocks south, this ambulance is not going three blocks south. Sean started telling him we're not safe where we are now, and we were fifteen blocks away. It was certainly not safe there. He was the whole time saying...cause at that point I was screaming at him, cause he wasn't in there. We were telling him what we saw, and he just wouldn't listen. Yeah, yeah, I know. [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] I still
hadn't realized that the first tower had fallen. [REDACTED]

[REDACTED]
[REDACTED] After I found out what actually

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happened, cause I found that out about a week ago, that that's what I ran from. So then, I think it was an EMS chief, I'm not sure who it was. Now more people were starting to come to this location, and he says okay, here's what we're gonna do...everybody's gonna go back down that way on the West Side Highway, and it's okay cause we have a police escort.

Q: Back south?

A: Back south on the West Side Highway, it's be okay cause we have a police escort. I don't want any free-lancing, we're all gonna go back in a nice orderly fashion. At that point my chest started to hurt, I couldn't breathe cause all I was breathing in was this black crap, I started coughing up all this black crap, all this stuff that looked like goo, and if I had to run another 15 blocks, I would have been dead. There was no way I could do it. I saw Lieutenant Hanlon, who is a lieutenant out of this station at that point, and I sat in the back of the ambulance. I started getting really scared, and really upset, cause people were telling me to go back in and die. There was nothing else they were telling me to do at that point, cause that was all that was gonna happen. So I sat in the back of the ambulance, I was coughing up, I was coughing up. Everyone kept asking me do you want oxygen? I was like no, I don't want it to get pushed down, I want to bring it up. I took some cold water, I put it on my face, I tried to cough up into it, and my chest really started hurting. Then my left arm started hurting, then the whole left side of my body started hurting, and I was like no, there's no way this is gonna happen. Lieutenant Hanlon came over to me and said are you okay? I said no, and I don't

P. ONDROVIC

know where my partner is. At that point I was crying cause I had no idea where my partner was, I thought I was having a goddamn heart attack, and these people are telling me to go back in. So then when this EMS chief said what we're gonna do I said no, I have chest pain, I want to go to the hospital. So 8 Adam took me to the hospital, they took me to St. Vincent's. At the time we were setting up, getting ready to take me out, they took my blood pressure, which was a little high at the time, it's never been before in my life, but I think that's a good time for it to be high.

Q: Did you take something?

A: They put me on oxygen, put me in the stretcher. As they put me in the stretcher, somebody came over the EMS radio, said that the North Tower is leaning. As we started driving off, we saw the second tower fall. As we're driving away, debris is hitting the back of the ambulance. We were now about 20 blocks away, debris was hitting the back of the ambulance as we were watching this thing come down, it was just this huge cloud. It was me and Jose Perez in the back of the bus saying, I can't believe we're seeing this. When we saw the towers start coming, I took the oxygen off my face, me and Jose are yelling up to the front to Joe just drive. Put your foot on the floor and drive, drive as fast as you can out of here, it's coming down. Joe was like, I know I see it, and he had his foot on the floor, which meant we were going 30 miles an hour. Stuff was still hitting the back of the ambulance. All I kept thinking of is if this much crap is hitting the back of the bus and we're 20 blocks away, this lieutenant wanted us to go 3 blocks south, and I'm thinking what happened to everybody who listened to this chief

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and went back? I don't even know if they got a chance to go back. You know? Also, after I was running, I remember running, and I remember somebody yelling on the radio May Day, May Day, I'm trapped! Over the EMS radio. I was thinking May Day? That's not a term we use, you know 10-13 or 85 forthwith, but somebody's yelling May Day, I'm trapped. Then you heard this loud buzz, and you didn't hear anymore transmissions after that until I would venture to guess it was 20 minutes to a half our later, and the first thing I remember hearing was somebody saying the North Tower is leaning. Within five minutes of that statement, the second tower came down. I spent the rest of my day at St. Vincent's hospital.

Q: Okay, is there anything else you would like to add to this?

A: I don't know if it matters, but I took the next three days off after that. I didn't go on [REDACTED] [REDACTED]
[REDACTED]
[REDACTED] I was okay with it until the lieutenant wouldn't listen to me, and would not understand that it was dangerous to go back in. He wouldn't accept that from me or the other guy that was with me. So I took the next three days off sick. During that time I went to see two counselors, one that was set-up by the union. Cause needless to say, like everyone else in the city, I did not sleep, I was having nightmares, I think the first full meal I ate was about last week. [REDACTED]
[REDACTED]. Then I went to go see an internist cause I started walking down the street

P. ONDROVIC

and all of a sudden, I couldn't breathe. I was trying to get back in the swing of things, [REDACTED]

[REDACTED] His statements to two of my co-workers, as well as a lieutenant was, it's part of the job. If I can't handle the job, I shouldn't have it. I don't think what any of us responded to that day was part of anyone's job, let alone ours. That was a military operation. Of course, what are you gonna do? It could have been my day off. I could have been shopping at Border's Books. [REDACTED]

[REDACTED] I don't think anyone's ever been exposed to something like this before here. Of course not, but we all know EMS has a high rate of suicide. Not saying that that's gonna be my case cause no, I refuse, I wouldn't let anybody push me to that corner.

Q: I'm glad to hear that.

P. ONDROVIC

A: But, this is what happens. This is one of the reasons that I pushed up my resignation date a lot quicker. Cause I was trying to hold out for another 8 months, as soon I can get another job I'm the hell outta here. It's not because of this event, cause other events like this will happen whether I'm on duty or off, it's the way I've been treated since.

Q: I thank you very much for speaking to me, the time is 7:08 and this concludes the interview.

Exhibit B:

- Fernando Camacho (9110318_FernandoCamacho.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110318.PDF

Exhibit A:

- Patricia Ondrovic (9110048_PatriciaOndrovic.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110048.PDF

File No. 9110318

WORLD TRADE CENTER TASK FORCE INTERVIEW

FIREFIGHTER FERNANDO CAMACHO

Interview Date: December 12, 2001

Transcribed by Laurie A. Collins

F. CAMACHO

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CHIEF KENAHAN: The time is 11:17 a.m., and this is Battalion Chief Dennis Kenahan, Safety Battalion of the Fire Department of the City of New York. I am conducting an interview with Fernando Camacho of Ladder 22, in the quarters of Ladder 22.

Q. Fernando, describe the events as you recall them on September 11th.

A. On the morning of September 11th I was on house watch, and it was about 8:00. A little bit after 8, because I was watching the news, I saw the first airplane or it would seem, an explosion on one of the towers; I believe it was the north tower. Chief Picciotto came down, called the dispatcher and went out on his way down.

Approximately 15 minutes later, both the engine and the truck, we got our tickets to go down to the World Trade Center. It took us about maybe 20 minutes to get there. We came out of our truck prepared to receive our orders, walked down to the command post which was across the street on the West Side Highway. It was across the street from the north tower. We

F. CAMACHO

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waited there approximately about 15 minutes for our orders.

After we waited for a while, we were told to go into the lobby of the Vista Hotel. We proceeded along the right side of the highway, basically the same side of the command post, down to the south pedestrian bridge, under the pedestrian bridge, to avoid being hit by bodies and debris going down.

We came in through the corner of Liberty and the West Side Highway into the Vista Hotel. There was a setup, a small command post or small gathering of firefighters there with a couple of chiefs. I can't tell who they were. I don't remember that.

We were in there approximately another ten minutes. Lieutenant Riley came back from talking to the chief, and we were assigned to go to the 75th floor. We got our equipment together and started walking up. Ladder 25 had gone ahead of us about five minutes before we got assigned to go to the 75th floor.

We went across the lobby of the hotel, going north, and we exited and made a right going

F. CAMACHO

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towards the second tower, the south tower. We must have walked about 100-200 feet to revolving doors, which led into a hallway to where the mall was. I could see maybe 20, 25 civilians and I believe Ladder 25, which was about another 100 to 150 feet ahead of us.

As we came in through the revolving doors, the lights went out. A second or two later everything started to shake. You could hear explosions. We didn't know what it was. We thought it was just a small collapse.

As I looked straight ahead of me, I saw total darkness. Everything was coming our way like a wave. The firefighters that were ahead of us and the civilians that were ahead of us totally disappeared.

We turned around. We were all pretty much within ten feet of each other: lieutenant, chauffeur, roof, OV, can. As we turned around, I ran probably maybe ten feet and that's when the body of the building or body of the collapse hit, and we were flying through the air basically. I must have flown 30, 40 feet through the air.

Then total quiet. You couldn't

F. CAMACHO

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breathe. You couldn't see anything. None of the equipment worked. My face piece was gone, flashlight, helmet. There were about maybe five or six civilians around us. We tried to get them out, as we tried to make our way out.

We did a perimeter search. Everything behind us was blocked and to our sides. We came back out basically through the same way we came into the building. We were facing the West Side Highway now, but there was a hole in the side of the building. So that's how we found our way out.

The only thing I know is that it was the roof, the OV and myself that got out. I had the can. Lieutenant Riley and the chauffeur we couldn't find. We didn't know if they were trapped or they made their way out in some other fashion. We found out later that they did make their way out, through another exit or behind us.

The West Side Highway was still pretty clear. There wasn't a lot of debris in front of us. We made our way north underneath the pedestrian bridge that's to the north. As we approached the rig again, I was being tended by

F. CAMACHO

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EMS for head wounds.

Five minutes after that the north tower started to lean.

Q. You saw it leaning?

A. Yeah.

What happened was that as I was standing there and getting bandaged, somebody said the tower is leaning. So me and Gorman -- he had the irons. We turned around and looked, and we could see the tower leaning. As it started to lean, it just came straight down. Now we're running again.

Q. Which way was it leaning? Towards West Street?

A. The tower was leaning not towards -- it leaned somewhat northwest but not -- it came down pretty straight after it leaned. It didn't really continue to lean. It just leaned a little bit and then came straight down.

Basically that's it. We ran and we went into the high school that's I believe somewhere --

Q. On Chambers.

A. Chambers, yeah. It might be Chambers,

Exhibit C: Attachments:

- James McGlynn (9110447_JamesMcGlynn.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110447.PDF
- DanWalker (9110341_DanWalker.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110341.PDF
- Glen Asaeda (9110062_GlenAsaeda.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110062.PDF
- George Kozlowski (9110308_GeorgeKozlowski.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110308.PDF
- Patrick McNally (9110199_PatrickMcNally.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110199.PDF
- John Malley (9110319_JohnMalley.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110319.PDF
- Kevin Gorman (9110434_KevinGorman.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110434.PDF
- Kenneth Escoffery (9110460_KennethEscoffery.PDF)
http://graphics8.nytimes.com/packages/pdf/nyregion/20050812_WTC_GRAPHIC/9110460.PDF

F. CAMACHO

7

a little further up from Chambers Street. We came back out after the cloud passed us and started helping out people that couldn't breathe or were injured.

That's basically the bulk of the information I can give.

Q. Fine. Let me get one thing straight.

From the time you noticed the leaning to the time of it coming down, are we talking about seconds here?

A. No more than three, four seconds.

Q. All right. Thank you for all your help, Fernando.

A. No problem.

CHIEF KENAHAN: The time now is 11:27, and this concludes the interview.

Exhibit C: Attachments:

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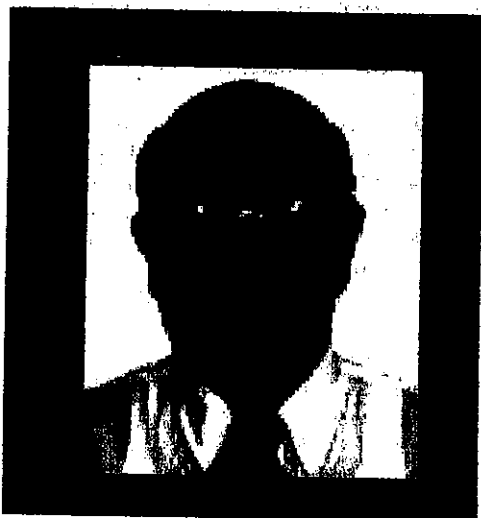
EXHIBIT B



Wave Front

DEPS News Letter -- Winter 2000 : Vol 1 Issue 1

Director's Forum



As the President of the Directed Energy Professional Society (DEPS), it is my great pleasure to welcome you all to *Wave Front*, the first DEPS newsletter. It is our intent to use this newsletter in a format that not only allows us to keep our members informed, but to energize the exchange of that information. By posting the *Wave Front* on our web page we will be able to accommodate quick updates and also allow our readers to readily disseminate that information via electronic means. We are confident this forum will continue to grow and provide a useful tool.

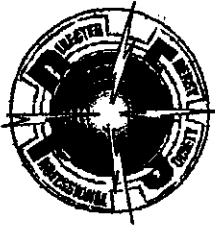
Even though our society is only a little over one year old, and it has already had many success stories—including the Directed Energy (DE) Symposia and multiple workshops. These get-togethers have provided platforms for exchange of ideas and solutions between hundreds of people involved in directed

energy from bench level scientists up to the highest policy makers within government, academia and industry. During our short history we have seen the adoption of congressional language that has led to the creation of the High Energy Laser Joint Technology Office and the subsequent addition of about \$21 million of new money in this year alone. We also continue to witness technological successes in this nations premiere laser programs like the Army Tactical High Energy Laser (THEL), the Air Borne Laser (ABL), the Space Based Laser (SBL), and the Ground Based Laser (GBL) program that is supported by the Starfire Optical Range (SOR). We have seen growing support from military commanders as they begin to identify the applications and threats from directed energy devices that include new high power microwave technology. All-and-all, it has been an excellent start.

As with any new organization, we have had our growing pains...and we will most likely see more. But, we have overcome the hardest part—the beginning! With the continuing support from our wonderful sponsors and outstanding members I am convinced that the DEPS will indeed be able to meet the challenges it has accepted in its mission and vision. We invite suggestions from all members.

Welcome to the DEPS family.

Donald L. Lamberson, President



Featured Technology

The 10-Mile Laser

by Don Slater, Lasers & Electro Optical Systems of The Boeing Company



Lasers in space, lasers in the stratosphere, lasers on and over the battlefield - we're at the beginning of an evolutionary new wave of weaponry. Highly precise, long range and primarily defensive in application, high energy lasers are emerging as key components in the military planner's options for defense against intercontinental ballistic missiles, theater ballistic missiles, overland and anti-ship cruise missiles and short-range rockets.

One of the newest concepts is the Airborne Tactical Laser (ATL), which is seeking to join the Space Based Laser (SBL) and the high altitude Airborne Laser (ABL) in moving from laboratory technology validation to government-sponsored concept demonstration and ultimately to operational capability.

The ATL places a high-energy laser of moderate power in a highly maneuverable tactical aircraft. Looking out and down from altitudes of 10,000 feet and less, the laser can engage and destroy a variety of airborne threats, such as cruise missiles, artillery-type rockets and unmanned aerial vehicles at horizontal ranges from five to 15 miles. We selected the V-22 for a point design study.

The technology that allows a weapons-capable laser to fit inside a small aircraft is also adaptable to ground vehicles for use in short-range air defense roles. A small tactical air defense laser on the ground could be extremely mobile, or a larger version could be transportable between temporary fixed locations.

High-energy lasers have two characteristics that make them viable as weapons: They're extremely fast and extremely precise. Whether the beams cross thousands of miles in space, hundreds of miles in the upper atmosphere or tens of miles in the lower atmosphere, the laser begins its attack within seconds of detecting its target and completes its destruction a few seconds later. This means the defender has time for multiple shots if needed to "kill" the target or engage multiple targets. For long-range engagements, early kill means the debris from the attacking missile falls far short of its target.

The laser beam delivers its energy to a relatively small spot on the target - from a few inches in diameter to a few feet, depending on the range. The incident intensity is sufficient (similar to a welding torch) to melt steel, even if the surface is shiny. Typical melt-through times for missile bodies are about 10 seconds. But if the heated area is under stress from aerodynamic or static pressure loads, catastrophic failure can occur even sooner. Laser weapons don't deliver as much "killing power" as guns or missiles, but they are effective against many targets. And, precision delivery makes up for limited delivered power.

The beam can attack specific aimpoints on a missile that are known to be vulnerable; for example, pressurized fuel tanks or aerodynamic control surfaces. The laser weapon design, therefore, must include the ability to "see" and identify specific aimpoints, and then put the beam on that aimpoint and hold it for a few seconds, and finally, to determine when the target has been destroyed.



Over the past two years, *several ATL concepts* been explored--they all rely on the same basic laser capability to generate 100 to 300 kW of optical power and deliver it precisely to a small, pre-defined spot.

Anti-ship cruise missile defense was the mission we used to establish some general requirements for an ATL point design concept. In open seas, Navy ships are well protected by their own air cover and missile systems which prevent enemy launchers (ships or planes) from getting too close, but in certain circumstances the risk of attack at relatively close range can't be avoided. The risk is compounded if the threat includes supersonic cruise missiles whose speed reduces the time available for defensive actions.

One valid scenario is the protection of ships entering the Arabian Gulf through the Straits of Hormuz.

Warships are required to pass through a "choke point" where they are relatively close to land-based attack from a potentially hostile country. Three ATLs are deployed in a defensive screen between the ships and the threat, which is about 30 km away from the ships in the assumed threat direction. The screen moves with the ships as they enter the gulf, repositioning in response to intelligence estimates of likely launcher locations.

Suddenly, a hostile raid of multiple cruise missiles is launched at Mach 2 velocity from the hostile coast, with a total assumed flight time of about two minutes.

The ATLs detect the incoming raid about 65 seconds before impact. The outermost engagements occur at 20 km, where laser dwell times of five seconds are required for each kill. At shorter ranges, the dwell times are reduced. One target is destroyed for each dwell period, and a few seconds are allocated for re-targeting between shots. As many as eight incoming threats are destroyed in about a minute, with the last engagement overlapping the defended ship's own self-defense zone.

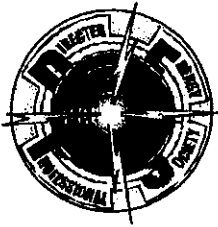
This scenario highlights the advantages of the ATL in situations where timelines are compressed by short distances and high-speed attackers. The combination of mobile air platforms and instantaneous engagements offered by the ATL provides a much stronger defense than ship- or air-launched defensive missiles alone, or even a ship-based laser weapon.

A potential second mission area is called "ultra-precision strike," and refers to uses of the ATL in operations other than a full-fledged war, an operation where military action is required, but rules of engagement are strictly controlled and collateral damage must be limited.

In recent years, U.S. and U.N. forces have been involved in many of these kinds of actions. These situations frequently place friendly, hostile and noncombatant personnel in close proximity. They can also involve operations in built-up areas where buildings and urban infrastructure interfere with freedom of movement and may be off-limits to damaging weaponry.

In these circumstances, the ATL offers the mobility of a small aircraft, high-resolution imagery for target identification and the ability to localize damage to a small area of less than a foot in diameter. In addition, from a standoff distance of a few miles, the ATL is not subject to direct attack by small arms or shoulder-launched anti-aircraft missiles. In fact, it can be far enough away that its action is almost covert. The laser beam makes no sound and is not visible. The effect of the beam may not be easily associated with a presence of an aircraft several miles away!

In these situations an ATL could have surprising effect. It could disable communications lines, disable radio and TV broadcast antennas, disable satellite or radar dishes, break electrical power lines and transformers, disable individual vehicles, and create various forms of distractions by setting small fires. These actions would serve to isolate and control hostile individuals and groups without casualties and with minimal, repairable damage.



But what about operating conditions? Laser light can't penetrate clouds. The SBL and ABL are immune to most weather because they operate at very high altitudes. Is ATL only useful on sunny days?

That's a fair question, because an ATL flies where clouds are common. And it's not just clouds - dust, sea spray, rain and fog can all interfere with beam propagation.

One way ATL responds to bad weather is to move away from it. An ATL will generally operate below most of the clouds. For missile defense, the ATL works best at altitudes around 10,000 feet. But it can operate down to about 2,500 feet; below that, the operational range becomes too short to be useful. Localized weather cells and fronts, however, may be avoided by maneuvering around them, a flexibility that goes a long way to keeping the availability of the ATL high, even in less than ideal weather.

Another approach is the use of good analytical models of laser beam propagation anchored to actual weather data collected in specific locations of interest. Using weather databases collected over many years, we can predict statistically what levels of performance to expect from the ATL.

For example, in the Arabian Gulf, temperatures are high, humidity moderate, cloud ceilings high, and visibility limited by blowing sand and dust much of the time. In the Korean peninsula, conditions vary greatly between summer and winter. Winters are cold and clear. Summers are hot, humid and frequently overcast.

In both areas, the baseline ATL design achieves > 20 km kill range 50 percent of the time. In the Arabian Gulf location, for 10 percent of the time the range will exceed 24 km, and at 10 percent of the time it will be less than 16 km. In the Korean coastal climate, the variation is greater. The "best" 10 percent of the time the range exceeds 30 km, but the worst 10 percent limits the range to less than 8 km.

Using the Straits of Hormuz scenario as a guideline, we established a set of top-level requirements for the ATL and then produced a system concept design and layout that fit the V-22 rotorcraft.

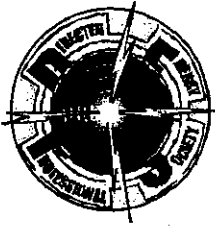
Some of the key parameters are:

- Laser power to meet 20 km lethal range goal
- Weapon system weight to allow 4 hr loiter in V-22
- Laser run time to allow at least 8 shots before refueling
- Primary mirror diameter largest that fits existing V-22 floor hatch
- Detection field-of-regard = full hemisphere
- Detection range matched to 20 km kill range
- Detect-to-shoot time allows first shot at max range for Mach 2 target

The Boeing packaging approach is to assemble the entire weapon system on four pallets that can be loaded into any available V-22.

The first pallet contains the surveillance sensors and mounts over the forward hatch in the V-22 floor. The sensors are mounted in a small, rotatable turret that extends through the floor after take-off. The second pallet contains the operator's workstation and electronics rack. The third pallet contains the laser device; its large turret is positioned directly over the main floor hatch in the V-22 and is also retracted for take-off and landing. The fourth pallet contains the laser exhaust management hardware and some of the fluid supply tanks.

The primary aircraft interfaces are to its computer data bus and electrical power and the mechanical tie-down points. At this point, we have not identified a need for any substantial modifications to the V-22. A roll-on, roll-off package could also be designed for the CH-47 Chinook helicopter. Airplanes like the C-130 have plenty of weight and volume capability, but would probably require a structural modification to accommodate the external turret.



The ABL was the starting point for assessing the technology readiness for the ATL. Boeing, TRW and Lockheed-Martin are teamed on the billion-dollar ABL effort to build a large laser weapon that flies in a modified 747 aircraft. It is designed to engage theater-class ballistic missiles from ranges over a hundred miles, while operating at altitudes around 40,000 feet.

Some of the technology in the ABL, however, goes well beyond the requirements for the ATL and is being adapted for use in smaller aircraft. In particular, the ABL requirements on beam pointing accuracy are much stricter, so the technologies for vibration stabilization and jitter correction are at the limits of the state-of-the-art. For ATL, the requirements are relaxed because the targets are closer, and the vibration and jitter control systems are less complex.

The ABL laser is much larger and more powerful than that required for the ATL mission, which is smaller and lighter, mostly because it doesn't produce - or need - the power to engage targets at the extreme range of the ABL.

Another difference is in how the laser exhaust gas is managed. The ABL uses a large ejector system to pump the gases through the laser and then exhaust them out the bottom of the airplane into the ambient atmosphere. At sea level, however, the external ambient air pressure is about five times higher, and the ABL ejector system can't exhaust the laser gases against this pressure.

Because of this, the ATL *[using the V-22 and COIL as point design]* manages the laser gases differently.

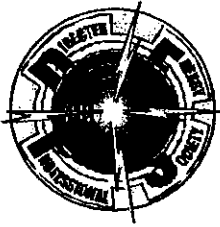
Instead of pushing them overboard, the ATL captures them internally in a "sealed exhaust system," which is basically a box full of cold zeolite. Zeolites are a family of commercially available materials that can be used in a wide variety of applications to trap impurities in process flows. In our application, zeolite adsorbs the laser gases in its internal microstructures, up to 20 percent of its own weight. At liquid nitrogen temperatures, the vapor pressure over the zeolite bed is low enough to pump the laser exhaust. The zeolite is recycled by warming it up to drive off the absorbed gases. It can then be cooled and reused.

The system impact of the sealed exhaust system is dramatic. It means the entire laser can be made compact and self-contained--essential attributes for a mobile weapon adaptable to various air and land vehicles. It is the enabling technology for tactical applications of COIL lasers.

This approach had never been used to pump a chemical laser, so we established an internal development program to obtain the data necessary to design a practical sealed exhaust system and to demonstrate it on a subscale laser. The core laser for the ATL is also rather different from the ABL COIL, because it can't use helium as the carrier gas for the reactants, and the ABL laser requires significant quantities of helium. (Zeolite can't pump helium.) For ATL, we also had to learn how to make a helium-free COIL. So the IR&D task included building a new laser as well as the sealed exhaust.

The next goal is to build an integrated, flyable ATL demonstrator, large enough to perform actual target kills in flight, but scaled down in power. That will require a moderate cost combination of capabilities that can prove the ATL's utility in all of the mission roles we've considered. If that can be accomplished, the look of the battlefield will be changed forever.

[This issue's featured article is submitted by Boeing, a DEPS Gold Sponsor. The contents are solely the input of the author and are not in anyway the product of the DEPS. The WaveFront staff is looking for support for future articles. If you are a DEPS member or sponsor, and would like to submit an article, please forward your input to Terry Franks at tfranks@deps.org --Thank You.]



Programmatic Update



On 6 June 2000 the High Energy Laser (HEL) Joint Technology Office (JTO) was formed to assist the community, and focus on the technology ready for near term pay-off. [See the JTO News Letter for additional information]

The new management structure called for in the HEL master plan has been implemented. Senior level policy oversight is carried out by a Board of Directors which is chaired by the Under Secretary of Defense (Acquisition, Technology and Logistics), Dr. Jacques Gansler and consist of the Military Service Senior Acquisition Executives and the Directors of the Defense Agencies. Operational oversight is carried out through the High Energy Laser Technology Council, which is chaired by Dr. Etter and consists of senior Military Service and Defense Agency leaders

The JTO is the focal point of the new management structure recommended by the HEL Master Plan. The JTO is responsible for developing a Department-wide, coordinated investment and execution strategy to take advantage of opportunities presented by HEL weapons technology. It is also responsible for the development and day to day management of a joint program for revitalizing HEL S&T and serving as a clearinghouse for new S&T initiatives proposed by DoD components. In the future the JTO plans to establish and maintain a technology alliance to foster information exchange and cooperative activities with other government organizations, universities and industry.

Cooperation Highlights

PAPA – PHASED ARRAY OF PHASED ARRAYS

Traditional methods of steering laser beams, and correcting wavefront aberrations, rely on mechanically actuated tip/tilt and deformable mirrors. These systems are often limited in performance and are costly. Rapid steering of large aperture laser beams to sub-micron precision may not even be attainable without prohibitively large power expenditures. A promising alternative approach is the Optical Phased Array (OPA).

Similar to the microwave phased array, an OPA is composed of multiple liquid crystal elements that modify the optical phase of an incident optical signal in transmission or reflection. Modification of the phase results in beam steering and/or aberration correction. The liquid crystal elements, called writeable gratings, are solid-state devices that are manufactured using semiconductor fabrication techniques. A grating modifies the phase of an incident optical signal via a voltage-controlled index of refraction. Creation of a linear gradient of optical path delay tilts the phase front and steers the optical beam. The realized linear gradient is actually folded similar to a blazed grating. Current devices are just over 4 cm square.

The OPA can be flood illuminated by a single high power laser source or each element of the array can be fed by its own unique laser. It is this last approach that is the focus of the Phased Array of Phased Arrays (PAPA) research program being managed by Dr. Paul McManamon, AFRL/SNJ, Wright-Patterson AFB, Ohio.

In the PAPA concept, each element of the OPA is flood illuminated by a fiber laser, driven by a Master Oscillator. The MOPA approach ensures that the phase of each fiber laser is consistent. With proper OPA phasing a rapidly steerable high power laser beam can be synthesized.

PAPA technology is scalable to high power by coupling multiple fiber lasers and increasing the power per fiber. High power optical systems can be simplified by eliminating expensive and fallible gimbals, and by reducing the number of optical elements. The OPA can steer active and passive sensors to acquire a target, provide multiple laser beams when needed, and focus and cleanup laser output. The possibility of phased